Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.
Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.
Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.
Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.
Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.
Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.
Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these operating instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.
Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

CAUTION!

- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

CAUTION!

Do not place anything on top of this unit or block the heat radiation vents in any way. In particular, do not place DVD recorder or CD/DVD players on this unit as heat radiated from it can damage your software.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

HDAVI Control™ is a trademark of Matsushita Electric Industrial Co., Ltd.

Manufactured under license from Dolby Laboratories.
"Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

"DTS", "DTS-ES", "Neo:6" and "DTS 96/24" are trademarks of Digital Theater Systems, Inc.

Refer to the back cover for "Supplied accessories".

Specifications (DIN 45 500)

■ AMPLIFIER SECTION

Power output (at AC 230 to 240 V)	
DIN 1 kHz (T.H.D. 1 %)	2 x 100 W (6 Ω)
20 Hz to 20 kHz continuous power output both channel driven	2 x 80 W (6 Ω)
Total harmonic distortion rated power at 20 Hz to 20 kHz	0.09 % (6 Ω)
Power bandwidth both channel driven, -3 dB	4 Hz to 88 kHz (6 Ω, 0.9 %)
Power output each channel driven (at AC 230 to 240 V)	
DIN 1 kHz (T.H.D. 1 %)	
Front (L/R)	100 W (6 Ω)
Center	100 W (6 Ω)
Surround (L/R)	100 W (6 Ω)
Surround Back (L/R)	100 W (6 Ω)
Load impedance	
Front (L/R)	
A or B	6 Ω to 16 Ω
A and B	6 Ω to 16 Ω
BI-WIRE	6 Ω to 16 Ω
Center	6 Ω to 16 Ω
Surround (L/R)	6 Ω to 16 Ω
Surround Back (L/R)	6 Ω to 16 Ω
Frequency response	
CD, DVD, DVD Recorder, VCR, TV/STB, AUX	4 Hz to 88 kHz, ±3 dB
DVD 6CH	4 Hz to 44 kHz, ±3 dB
Input sensitivity and impedance	
CD, DVD/DVD 6CH, DVD Recorder, VCR, TV/STB, AUX	200 mV/22 kΩ
S/N at rated power (6 Ω)	
CD, TV/STB, DVD, DVD Recorder (Digital input)	90 dB (IHF, A: 103 dB)
Tone controls	
BASS	50 Hz, +10 dB to -10 dB
TREBLE	20 kHz, +10 dB to -10 dB
Channel balance (250 Hz to 6.3 kHz)	±1 dB
Channel separation	55 dB
Subwoofer frequency response (-6 dB)	7 Hz to 200 Hz

Digital input	**(OPTICAL)**	2
	(COAXIAL)	2

HDMI (Version 1.2a)	**Input**	1
	Output	1

■ FM TUNER SECTION

Frequency range	87.50 MHz to 108.00 MHz
Sensitivity	
S/N 30 dB	1.5 µV/75 Ω
S/N 26 dB	1.3 µV/75 Ω
S/N 20 dB	1.2 µV/75 Ω
IHF usable sensitivity (IHF '58)	1.5 µV/75 Ω
IHF 46 dB stereo quieting sensitivity	22 µV/75 Ω
Total harmonic distortion	
MONO	0.2 %
STEREO	0.3 %
S/N	
MONO	60 dB
STEREO	58 dB
Frequency response	20 Hz to 15 kHz, +1 dB, -2 dB
Alternate channel selectivity	±400 kHz, 65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	50 dB
Stereo separation	40 dB
Carrier leak	19 kHz, -30 dB 38 kHz, -50 dB
Channel balance (250 Hz to 6.3 kHz)	±1.5 dB
Limiting point	1.2 µV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522 kHz to 1611 kHz (9 kHz steps) 530 kHz to 1620 kHz (10 kHz steps)
Sensitivity	20 µV, 330 µV/m
Selectivity (at 999 kHz)	55 dB
IF rejection (at 999 kHz)	50 dB

■ VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1± 0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω (unbalanced)
S-Video	
Input	DVD, DVD Recorder, TV/STB
Output	TV MONITOR
Component Video	
Input	DVD Recorder, TV/STB
Output	TV MONITOR

■ GENERAL

Power supply	AC 230 to 240 V, 50 Hz
Power consumption	140 W
Dimensions (W x H x D)	430 mm x 107.5 mm x 390 mm
Mass	4.7 kg

Power consumption in standby mode:	**0.9 W**
Power consumption in HDMI off mode:	**0.35 W**

Notes:
1. Specifications are subject to change without notice.
2. Mass and dimensions are approximate.
3. Total harmonic distortion is measured by the digital spectrum analyzer.

Help messages

Message	Causes and solutions
CANCEL MUTING FUNCTION	Muting is on. Press [MUTING] on the remote control to cancel (➡ page 31).
MUSIC MODE ONLY	You are trying to use a feature that is available only in ***"MUSIC"*** mode. Change the mode to ***"MUSIC"*** (➡ pages 22 to 23).
NO CENTER AND SURROUND SPEAKERS	Center and surround speakers are not connected, or they are set as absent. Connect the speakers (➡ page 13) or change their setting to present (➡ page 27).
NO SURROUND AND SURROUND BACK SPEAKERS	Surround and surround back speakers are not connected, or they are set as absent. Connect the speakers (➡ page 13) or change their setting to present (➡ page 27).
NO SURROUND BACK SPEAKER	Surround back speakers are not connected, or they are set as absent. Connect the speakers (➡ page 13) or change their setting to present (➡ page 27).
NOT POSSIBLE FOR DTS-ES SOURCE	You are trying to use an effect unavailable with DTS-ES sources.
NOT POSSIBLE FOR DVD AUDIO SOURCE	You are trying to use an effect unavailable with DVD-Audio sources.
NOT POSSIBLE FOR DVD 6CH INPUT	You are trying to use an effect unavailable with DVD analogue 6-channel input.
NOT POSSIBLE FOR THIS INPUT SOURCE	You are trying to use an effect unavailable with the current input source.
PCM FIX (flashing)	You have set the ***"PCM FIX"*** mode. Cancel this mode (➡ page 28).
SELECT SPEAKER A	SPEAKERS A is off. Press [SPEAKERS A] to turn on ***"SPEAKERS A"*** (➡ page 18).
SPEAKERS ARE OFF	SPEAKERS A and SPEAKERS B are off. Select one of the speakers (➡ page 18).